

Appl. No. 10/038,756

Amdt. Dated: July 14, 2004

Reply to Office Action of April 14, 2004

REMARKS/ARGUMENTS

Applicants' attorney thanks the Examiner for his comments and for his thoughtful analysis of the pending application. Claims 1-10 and 12-29 are presented for the Examiner's consideration. Claim 8 has been amended to require that "the sheet has a skin-like surface on the outside of the sheet." Claims 12 and 13 have been amended to reformat ZnCl_2 to ZnCl_2 . Claim 15 has been amended to reformat CaCl_2 to CaCl_2 . Claim 11 remains canceled. Pursuant to 37 C.F.R. § 1.111, reconsideration of the present application in view of the foregoing amendments and the following remarks is respectfully requested.

By way of the Office Action mailed April 14, 2004, the Examiner objected to claims 12, 13, and 15 for the informality of not having the "2" subscripted in the chemical formulas ZnCl_2 and CaCl_2 . These claims have been amended to place the chemical formulas in proper form.

By way of the Office Action mailed April 14, 2004, the Examiner rejected claim 8 under 35 U.S.C. § 112, first paragraph, for allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is respectfully **traversed** to the extent that it may apply to the presently presented claims.

The Examiner stated that the invention relates to absorbent foam compositions, and that "pores on the surface of sheet are substantially closed-celled" is not enabling because nowhere in the Specification, including Example 7, is there a teaching pertaining to how to effectively use a foam having a substantially closed-cell surface for fluid absorption and transport. Applicants have amended claim 8 to delete the phrase "pores on the surface of the sheet are substantially closed-celled" and have added the phrase "sheet has a skin-like surface on the outside of the sheet" as taught in the specification. It is believed that this amendment overcomes the Examiner's rejection.

In addition, Applicants would like to re-emphasize that Example 7 of the specification teaches that drying with a desiccant can have the effect of creating a skin-like surface on the outside of the sheet while maintaining the highly porous, open-celled foam structure in the interior of the sheet, to

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provide a product with differential wetting (pg. 32, lines 18-22). The test results of Example 8, presented in Table 7, relating to use of this embodiment exhibit, among other things, a difference between wet and dry stretch, and wet and dry tensile, which is evidence that *absorption* of fluid into the structure does indeed take place. Since uses for absorbent products are well known in the art, it is believed that the Examiner's rejection has been overcome. For at least these reasons, Applicants respectfully request that this rejection be withdrawn.

By way of the Office Action mailed April 14, 2004, the Examiner rejected claim 8 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner asserted that the term "substantially" is vague, indefinite and confusing. Applicants have deleted the term "substantially" from claim 8 and thus render the rejection moot. Applicants respectfully submit that this rejection is now untenable and should be withdrawn.

By way of the Office Action mailed April 14, 2004, the Examiner rejected claims 1-7 and 9-29 under 35 U.S.C. § 103 as allegedly being obvious to one of ordinary skill in the art at the time the invention was made and thus unpatentable over U.S. Patent Number 3,954,493 to Battista et al. This rejection is respectfully **traversed** to the extent that it may apply to the presently presented claims.

Battista et al. is directed to a method of treating regenerated cellulose sponge material to reduce lint formation upon wetting (column 2, lines 33-36). Battista et al. discloses a compressed, commercially available regenerated cellulose sponge formed from a mixture of viscose, reinforcing fibers, and pore forming crystals which has been treated to contain a film-forming polymer that is uniformly distributed throughout the sponge (column 1, lines 13-30; column 4 lines 20-35; and claim 1). In contrast, Applicants' invention is directed to a high quality regenerated carbohydrate foam that can be produced from materials such as mixed office waste or pure chitin (page 8, lines 12-13 and page 20, lines 12-13). One of ordinary skill in the art would readily recognize that treating a cellulose sponge with a film-forming polymer to reduce lint formation upon wetting is not related to producing a carbohydrate foam using low quality starting materials such as mixed office waste and/or non-cellulosic materials such as pure chitin, and thus they are not directed to the

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same art. Therefore, one skilled in the art would have no motivation, and there would be no suggestion, to utilize Battista et al. to produce a regenerated carbohydrate foam made from starting materials such as mixed office waste or pure chitin.

In utilizing Battista et al. to reject claims 1-7 and 9-29 under 35 U.S.C. §103 as allegedly being obvious, the Examiner has stated that "Battista's method of forming open-celled sponge has not been relied upon" (Office Action dated April 14, 2004, paragraph 7). Rather, the Examiner has relied on a statement in the Background of the Battista et al. reference that it is well known that regenerated cellulose sponges are formed from a mixture of viscose, reinforcing fibers such as linen, jute, cotton, regenerated cellulose fibers and the like. Applicants note that according to Battista et al., a pore forming constituent, generally crystals, is also required. Applicants agree that cellulose sponges can be made using the viscose process, as discussed above. However, Applicants teach in their Specification that the foam produced by Applicants' process of at least partially dissolving a carbohydrate in a zinc chloride solution, and further introducing a gas to produce the pores, does not result in a product with the same properties as the cellulose sponge produced by the viscose process of Battista et al. For example, Applicants disclose that foam products made according to the viscose process "undergo considerable shrinkage and may become unevenly deformed and compacted during drying, making it difficult to obtain a low density foam with a uniform pore structure on a continuous basis" (page 4, lines 18-21). In contrast to foams made using the viscose process, Applicants' foam products have a controllable pore size and connectedness (pg. 8, line 15, and pg. 9, line 18). Additionally, different types of foam products can be created by varying the components or processing steps of Applicants' invention, such as beating method, blow ratio, and drying method. (pg. 22, lines 5-11).

Furthermore, Applicants disclose that a foam according to Applicants' invention can be made from materials other than cellulose, such as pure chitin (page 13, line 15 and page 18, lines 1-2). In contrast, Battista et al. is directed solely to sponges that comprise regenerated cellulose (column 1, lines 13-15). Applicants additionally teach that according to prior art processes (such as the viscose process) for producing chitin containing foams, it is impossible to foam pure chitin (page 5, lines 8-9). Instead, chitin must be added to a viscose solution or otherwise combined with a solution of a different carbohydrate to be processed (page 5, lines 9-11). Therefore, it would be understood by one of ordinary skill in the art that a cellulose sponge according to Battista et al.

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would not have the same properties as a foam, such as a pure chitin foam, according to Applicants' invention.

Applicants further disclose that the use of used cellulose products, such as mixed office waste, would not provide a desirable cellulose source for the cellulose sponges made using the viscose process of Battista et al. (page 2, line 14 – page 3, line 3, and page 4, lines 10-18). In contrast, a foam according to Applicants' invention embraces the use of used cellulose, such as mixed office waste (page 18, lines 1-8). It would be understood by one of ordinary skill in the art that a cellulose sponge of Battista et al. made under the requirements of the viscose process would have different properties than a mixed office waste foam according to Applicants' invention, including the likelihood that a mixed office waste foam would include damaged fibers and impurities that Battista's sponge would not.

It is well established in U.S. patent law that three requirements must be met for establishing a *prima facie* case of obviousness. See MPEP § 2143. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. As discussed above, Battista et al. does not disclose, and the Examiner has failed to provide, one of ordinary skill in the art some suggestion or motivation to modify the Battista et al. reference to obtain the foam of Applicants' invention. Therefore, requirement number 1 has not been met.

Second, there must be a reasonable expectation of success. As discussed above, materials that work for Applicants' invention (such as pure chitin) are known in the art to not produce a cellulose sponge according to Battista et al. Therefore, requirement number 2 has also not been met.

Third, the alleged prior art reference must teach or suggest all the claim limitations. In order to obtain the desired properties of a foam according to Applicants' invention (such as controlled pore size, or use of pure chitin as the base carbohydrate), Applicants' invention requires that the carbohydrate foam must be produced from an aqueous carbohydrate composition which comprises (1) a water-insoluble carbohydrate that is (2) at least partially dissolved in an aqueous zinc chloride solution capable of dissolving the carbohydrate, and (3) has a plurality of pores dispersed within the matrix, wherein (4) the pores are produced by introduction of a gas into the aqueous carbohydrate composition prior to regeneration (claim 1). In contrast, Battista et al. requires that the cellulose sponge must be produced from a mixture of (1) viscose, (2) reinforcing fibers, and (3)

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a pore forming constituent, generally crystals (column 1, lines 13-19). Battista et al. further requires that the viscose solution of viscose contains from 5 to 8 percent cellulose, 6 to 100 percent reinforcing fibers, and 900 to 2500 percent of the pore forming constituent. It is readily recognized by one of ordinary skill in the art that Battista et al. does not teach, or even suggest, each and every claim limitation of Applicants' invention. Therefore, requirement number 3 has also not been met. Since at least one of the three requirements under MPEP § 2143 has not been met, Applicants respectfully assert that the Examiner has not met the burden of establishing a *prima facie* case of obviousness. Applicants respectfully request that this rejection be withdrawn.

Lastly, the Examiner has noted that while Applicants' Remarks in the Response dated March 1, 2004 point out the process differences between the prior art and instantly claimed invention, Applicants' arguments are deficient in providing any evidentiary support that the structure or chemistry of the instantly claimed invention is distinct over the prior art. The Examiner also adds that it should be noted that arguments of counsel cannot take the place of factually supported objective evidence, and refers to MPEP § 2144.08.II.B. According to MPEP § 2144.08.II.B, rebuttal evidence and arguments can be presented in the specification. *In re Soni*, 54 F.3d 746, 750, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995). It is believed that the rebuttal evidence and arguments above can indeed be found in the specification, and references have been provided where appropriate.

For the reasons stated above, it is respectfully submitted that all of the presently presented claims are in form for allowance.

Please charge any prosecutorial fees which are due to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

The undersigned may be reached at: (920) 721-4405.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I, Judith M. Anderson, hereby certify that on July 14, 2004 this document is being facsimile transmitted to: Commissioner for Patents, United States Patent and Trademark Office Alexandria, VA 22313-1450.

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